



STATE of COLORADO

BACK PRESSURE TEST FOR NATURAL GAS WELLS

TYPE OF TEST:		INITIAL	ANNUAL	SPECIAL	TEST DATE																			
INFORMATION ONLY		ONE POINT			09-26-79																			
COMPANY		LEASE & WELL NO.			ACRES																			
ENERGY RESERVES		F.M. LEWIS #1			0																			
COUNTY	LOCATION	SEC.	TWN./BLK.	RNG./SRVY.	LEASE NO.																			
RACA	NESW	33	34 S	41W	009-0000000																			
FIELD	FIELD NO.	RESERVOIR	PIPE LINE CONNECTION																					
GREENWOOD		RED CAVE	PF PL																					
COMPLETION DATE	TOTAL DEPTH		PLUG BACK T.D.		ELEVATION																			
07-22-76	1505		1453		3566																			
CASING SIZE	WT.	I.D.	SET AT:	PERFORATIONS	FROM	TO																		
4.5000	9.50	4.0900	1503		1285	1295																		
TUBING SIZE	WT.	I.D.	SET AT:	PERFORATIONS	FROM	TO																		
TYPE OF COMPLETION	PACKER SET AT	PRODUCING THRU		RESERVOIR TEMP	P _a																			
SINGLE GAS	0	C		078 AT 01290	14.4																			
L.	H.	G _g	% CO	% N	H ₂ S	TAPS																		
1290	1290	0.826	0.11	54.87	0.0	3																		
FLOW DATA				TUBING DATA		CASING DATA																		
NO.	(PROVER) (LINE) ORIFICE SIZE	PRESS. PSIG.	DIFF. (IN) ROOTS	TEMP. °F	PRESS. PSIG.	TEMP. °F																		
1	3 X 1.750	35.0	13.0	78																				
2																								
3																								
4																								
5																								
RATE OF FLOW CALCULATIONS																								
NO.	COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	PRESSURE PSIA	FLOW TEMPERATURE FACTOR (F _t)	GRAVITY FACTOR (F _g)	SUPER-COMP. FACTOR (F _{pv})																		
1	16.0100	25.34	49.4	0.9831	1.100	1.002																		
2																								
3																								
4																								
5																								
NO.	P _r	TEMP. R	T _r	Z	P _w	P _w ²																		
1	0.09	538	1.89	0.996	137.5	18.9																		
2																								
3																								
4																								
5																								
<table border="0" style="width:100%;"> <tr> <td>G.O.R.</td> <td>0.0000</td> <td>MCF/BBL</td> </tr> <tr> <td>A.P.I. Gravity</td> <td>0.000</td> <td>@ 60°F</td> </tr> <tr> <td>G_g</td> <td>0.826</td> <td></td> </tr> <tr> <td>G_m</td> <td></td> <td>0.826</td> </tr> <tr> <td>P_{cr}</td> <td>573</td> <td>psia</td> </tr> <tr> <td>T_{cr}</td> <td>285</td> <td>R</td> </tr> </table>							G.O.R.	0.0000	MCF/BBL	A.P.I. Gravity	0.000	@ 60°F	G _g	0.826		G _m		0.826	P _{cr}	573	psia	T _{cr}	285	R
G.O.R.	0.0000	MCF/BBL																						
A.P.I. Gravity	0.000	@ 60°F																						
G _g	0.826																							
G _m		0.826																						
P _{cr}	573	psia																						
T _{cr}	285	R																						
OPEN FLOW OR DELIVERABILITY CALCULATIONS																								
P_c 287.6 P_c^2 82.7 P_d _____ P_d^2 _____ P_o^2 _____																								
P_c^2	$P_c^2 P_w^2$	$\frac{P_c^2}{P_c^2 P_w^2}$	$\left[\frac{P_c^2}{P_c^2 P_w^2}\right]^n$	WELLHEAD OPEN FLOW	$P_c^2 P_d^2$	$\frac{P_c^2 P_d^2}{P_c^2 P_w^2}$																		
82.7	63.8	1.296	1.247	548																				
<table border="0" style="width:100%;"> <tr> <td>WELLHEAD OPEN FLOW</td> <td>548</td> <td>Mcf/d</td> <td>ANGLE OF SLOPE</td> <td>49 DEG 38 MIN</td> <td>SLOPE, n</td> <td>0.850</td> </tr> </table>							WELLHEAD OPEN FLOW	548	Mcf/d	ANGLE OF SLOPE	49 DEG 38 MIN	SLOPE, n	0.850											
WELLHEAD OPEN FLOW	548	Mcf/d	ANGLE OF SLOPE	49 DEG 38 MIN	SLOPE, n	0.850																		
REMARKS:																								
APPROVED BY COMMISSION		CONDUCTED BY		CALCULATED BY		CHECKED BY																		
		P. L. L.		UNITVAC 1110																				

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XXXXXXXXXXXXXXXXXXXX

BOTTOM HOLE PRESSURE FROM WHSIP
CALCULATED BY STEP-WISE METHOD

DATE - 09-26-79

STATE - COLO

COUNTY - BACA

COMPANY - ENERGY RESERVES

LEASE - E.M.LEWIS #1

SECTION - 33

TOWNSHIP - 34S

RANGE - 41W

RESERVOIR - RED CAVE

FIELD - GREENWOOD

L - 1290 H - 1290 L/H - 1.000

GG - 0.826 PCR - 573.00 TCR - 285.00

GMIX - 0.826 PCR - 573.00 TCR - 285.00

%CO2 - 0.11 %N2 - 54.87 WHSIP - 273.2

WELLHEAD TEMP USED	GRAVITY USED	BHP(PF)		DEPTH FEET	BHP/Z	
60	0.826	298.9	AT	1290	305.6	- H
54	0.826	299.0	AT	1290	305.7	- RESERVOIR

STATE of COLORADO

BACK PRESSURE TEST FOR NATURAL GAS WELLS

RECEIVED

DATE OF TEST:		INITIAL	ANNUAL	SPECIAL	RECEIVED		TEST DATE
CONTRACT			ONE POINT		MAR 18 1982		03-04-82
PANY			LEASE & WELL NO.				ACRES
ENERGY RESERVES GR			LEWIS F M 1		COLO. OIL & GAS CONS. COMM		0
ITY		LOCATION	SEC.	TWN./BLK.	RNG./SRVY.	LEASE NO.	
BACA		SWNESW	033	034S	041W	009-00000000	
D		FIELD NO.	RESERVOIR		PIPE LINE CONNECTION		
GREENWOOD		-	RED CAVE		PANHANDLE EASTERN		
PLETION DATE			TOTAL DEPTH		PLUG BACK T.D.	ELEVATION	
08-04-76			1505		1453	3566	
ING SIZE	4.5000	WT.	10.70	I.D.	4.0900	SET AT:	1503 PERFORATIONS
						FROM	1285 TO 1295

NG SIZE	WT.	I.D.	SET AT:	PERFORATIONS	FROM	TO
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DATE OF COMPLETION		PACKER SET AT		PRODUCING THRU		RESERVOIR TEMP		P _a
SINGLE GAS		0		C		070 AT 01290		14.4
L.	H.	G _g	% CO	% N	H ₂ S	PROVER	METER RUN	TAPS
1290	1290	0.833	0.04	56.66	0.0		3	FLANGE

[illegible]

RATE OF FLOW CALCULATIONS						
COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	PRESSURE PSIA	FLOW TEMPERATURE FACTOR (F_T)	GRAVITY FACTOR (F_g)	SUPER-COMP. FACTOR (F_{pv})	RATE OF FLOW Q, MCFD
4.9120	22.45	50.4	1.0344	1.095	1.003	125

[illegible]

OPEN FLOW OR DELIVERABILITY CALCULATIONS								DVR
P_c _____	284.4	P_c^2 _____	80.9	P_d _____	P_d^2 _____	P_o^2 _____		FJP
P_c^2	$P_c^2 P_w^2$	$\frac{P_c^2}{P_c^2 P_w^2}$	$\left[\frac{P_c^2}{P_c^2 P_w^2} \right]^n$	WELLHEAD OPEN FLOW	$P_c^2 P_d^2$	$\frac{P_c^2 P_d^2}{P_c^2 P_w^2}$	$\left[\frac{P_c^2 P_d^2}{P_c^2 P_w^2} \right]^n$	DELIVERABILITY
80.9	65.1	1.241	1.202	151				JAM
								JJD
								RLS
								CGM
LINEAD OPEN FLOW				151	Meid	ANGLE OF SLOPE	49 DEG 38 MIN	SLOPE, n 0.850

MARKS:			
APPROVED BY COMMISSION	CONDUCTED BY	CALCULATED BY	CHECKED BY
6	PEPL	UNIVAC 1110	

RECEIVED

MAR 18 1982

COLO. OIL & GAS CONS. COMM.

BOTTOM HOLE PRESSURE FROM WHSIP
CALCULATED BY STEP-WISE METHOD

DATE - 03-04-82

STATE - COLORADO COUNTY - BACA

COMPANY - ENERGY RESERVES GR

LEASE - LEWIS E M 1

SECTION - 033 TOWNSHIP - 034S RANGE - 041W

RESERVOIR - RED CAVE FIELD - GREENWOOD

L - 1290 H - 1290 L/H - 1.000

GG - 0.833 PCR - 570.00 TCR - 283.00

GMIX - 0.833 PCR - 570.00 TCR - 283.00

%CO2 - 0.04 %N2 - 56.66 WHSIP - 270.0

WELLHEAD TEMP USED	GRAVITY USED	BHP(PF)		DEPTH FEET	BHP/Z	
60	0.833	295.8	AT	1290	302.6	- H
54	0.833	295.8	AT	1279	302.5	- RESERVOIR

IDENT NO 009-000000000

STATE of COLORADO
BACK PRESSURE TEST FOR NATURAL GAS WELLS

RECEIVED

OF TEST:		INITIAL	ANNUAL	SPECIAL	TEST DATE
CONTRACT		ONE POINT			APR 15 1983
COMPANY		LEASE & WELL NO.			ACRES
ENERGY RESERVES GR		LEWIS F M 1			0
COUNTY	LOCATION	SEC.	TWN./BLK.	RNG./SRVY	LEASE NO.
BACA	SWNESW	033	034S	041W	009-00000000
CITY	FIELD NO.	RESERVOIR	PIPE LINE CONNECTION		
GREENWOOD	-	RED CAVE	PANHANDLE EASTERN		
COMPLETION DATE	TOTAL DEPTH	PLUG BACK T.D.	ELEVATION		
08-04-76	1505	1453	3566		
CASING SIZE	WT.	I.D.	SET AT:	PERFORATIONS	FROM TO
4.5000	10.70	4.0900	1503		1285 1295

TUBING SIZE	WT.	I.D.	SET AT:	PERFORATIONS	FROM TO
TYPE OF COMPLETION	PACKER SET AT	PRODUCING THRU	RESERVOIR TEMP	P _d	
SINGLE GAS	0	C	070 AT 01290	14.4	
L.	H.	G _g	% CO	% N	H ₂ S
1290	1290	0.831	0.04	56.66	0.3
			PROVER	METER RUN	TAPS
			3		FLANGE

FLOW DATA					TUBING DATA		CASING DATA		DURATION OF FLOW HOURS
NO.	(PROVER) (LINE) ORIFICE SIZE	PRESS. PSIG.	DIFF. (IN) ROOTS	TEMP. °F	PRESS. PSIG.	TEMP. °F	PRESS. PSIG.	TEMP. °F	
SI							288.0	60	72.0
1	3 X 1.000	59.0	4.0	59			93.0	60	25.0
2									
3									
4									
5									

RATE OF FLOW CALCULATIONS							
NO.	COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	PRESSURE PSIA	FLOW TEMPERATURE FACTOR (F _t)	GRAVITY FACTOR (F _g)	SUPER-COMP. FACTOR (F _{pv})	RATE OF FLOW Q, MCFD
1	4.9120	17.13	73.4	1.0010	1.097	1.003	93
2							
3							
4							
5							

NO.	P _r	TEMP. R	T _r	Z	P _w	P _w ²	P _c ² P _w ²	G.O.R.	MCF/BBL
1	0.13	519	1.83	0.994	107.4	11.5	79.9	0.000	0.000
2									
3									
4									
5									

A.P.I. Gravity	0.831	60 °F
G _g	0.831	
G _m	570	psia
P _{cr}	283	R
T _{cr}		

OPEN FLOW OR DELIVERABILITY CALCULATIONS								
P_c <u>302.4</u> P_c^2 <u>91.4</u> P_d _____ P_d^2 _____ P_o^2 <u>0.2</u>								
P_c^2	$P_c^2 P_w^2$	$\frac{P_c^2}{P_c^2 P_w^2}$	$\left[\frac{P_c^2}{P_c^2 P_w^2}\right]^n$	WELLHEAD OPEN FLOW	$P_c^2 P_d^2$	$\frac{P_c^2 P_d^2}{P_c^2 P_w^2}$	$\left[\frac{P_c^2 P_d^2}{P_c^2 P_w^2}\right]^n$	DELIVERABILITY
91.4	79.9	1.144	1.121	104				

WELLHEAD OPEN FLOW	104	ANGLE OF SLOPE	49 DEG 38 MIN	SLOPE, n	0.850
REMARKS:					
APPROVED BY COMMISSION	CONDUCTED BY	CALCULATED BY	CHECKED BY		
	DEPL	UNIVAC 1110			

RECEIVED

APR 15 1983

COLORADO OIL & GAS CONS. COMM.

BOTTOM HOLE PRESSURE FROM WHSIP
CALCULATED BY STEP-WISE METHOD

DATE - 03-29-83

STATE - COLORADO COUNTY - BACA

COMPANY - ENERGY RESERVES GR

LEASE - LEWIS E M 1

SECTION - 033 TOWNSHIP - 034S RANGE - 041W

RESERVOIR - RED CAVE FIELD - GREENWOOD

L - 1290 H - 1290 L/H - 1.000

GG - 0.831 PCR - 570.00 TCR - 283.00

GMIX - 0.831 PCR - 570.00 TCR - 283.00

%CO2 - 0.04 %N2 - 56.66 WHSIP - 288.0 / 72.00 HRS

WELLHEAD TEMP USED	GRAVITY USED	BHP(PF)		DEPTH FEET	BHP/Z	
60	0.831	314.5	AT	1290	322.1	- H
54	0.831	314.5	AT	1279	322.1	- RESERVOIR

IDENT NO 009-000000000